

13488

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

SUBJECT: RCRA Inspection.

DATE: 8/29/88

Facility: *Occidental Chemical Corp.*

ID #: *DED 0039 132 66*

FROM: Charlene C. Harrison, *CCH* Environmental Engineer
RCRA Enforcement General Section (3HW15)

TO: FILE

THRU: *my 9/16/88* Victoria P. Binetti, Chief
RCRA Enforcement General Section (3HW15)

THE STATE IS TAKING ACTION TO RESOLVE THE VIOLATIONS IN
THIS INSPECTION REPORT.

WE WILL MONITOR THE STATE ACTIVITY REGARDING RESOLUTION
OF THESE VIOLATIONS.

Media

____ NPDES
____ TSCA
____ ☒ RCRA
____ AIR
____ Other

FY 88 REGION III ESD
INSPECTION TRACKING SYSTEM

Facility Name: Occidental Chemical Corp. Type of Inspection: CEI
Delaware City, De. 19706

Address: _____ Date of Inspection: 3-3-88

Date Report Mailed: 4/18/88

Inspector's Name: Houghton/Gower

Permit/ID No. DED 003913266 Inspector's Office: CRL

CHECK APPLICABLE

____ Major
____ Municipal
____ Federal
____ Joint
____ Oversight
____ Other

____ Minor
____ Industrial

Comments: _____

Marilyn Gower
(Inspector)

RCRA Compliance Evaluation Inspection

Occidental Chemical Corporation
River Road
Delaware City, Delaware 19706

Date of Inspection: March 3, 1988

EPA Representatives:

Marilyn Gower
Physical Science Technician

George Houghton
Environmental Protection Specialist

Ruth Lopez
Chemical Engineer

Facility Representative:

Thomas Horvath
Environmental Engineer

State Representative:

Jay Brahmhatt
Environmental Engineer

COMPLIANCE STATUS SUMMARY

1. The two-one yard containers adjacent to the mercury cell building need to be covered.
 2. The quantity of hazardous waste in the area adjacent to and inside the mercury cell building exceeded the maximum permissible (55 gal) for satellite accumulation .
 3. A sign stating "Danger etc..." must be placed at the surface impoundment area and the railroad entrance to Oxy-Chem.
 4. Based on results of the re-test potential groundwater problems should be investigated further.
-

BACKGROUND

On Mar. 3, 1988 a RCRA Compliance Evaluation Inspection (CEI) was conducted jointly with Delaware DNREC and EPA Central Regional Lab at Occidental Chemical Corporation (formerly Diamond Shamrock), Delaware City, Delaware. The facility was chosen for a RCRA CEI by EPA Region III.

PERMIT STATUS

The permit for the facility is in draft status and should be advertised for public comment within a month of this inspection.

FACILITY DESCRIPTION

OxyChem uses sodium chloride, water, electricity and potassium chloride to produce chlorine, caustic soda, hydrogen and potassium hydroxide. Products are sold in bulk to their customers. The facility was inspected as a generator and a TSD facility.

Areas of hazardous waste storage or disposal include:

1. Surface impoundment where waste listed as K071, K106 and EP Tox D009 are disposed
2. Drum storage pad
3. Carbon tetrachloride storage tank
4. Satellite accumulation
5. Dumpsters, chlorine cylinder and rolloffs used for less than 90 days.

INSPECTION OBSERVATIONS

Delisting Petition

The OxyChem has filed for delisting of its brine sludge (K071). If granted, the facility would continue to fill the impoundment

with this sludge. According to facility representatives, there are three to four years of storage remaining in the impoundment. The facility is planning to file for delisting of the Shriver filter cake (D009 and K106).

Satellite Generation/Accumulation

Two open containers of D009 waste were observed outside the "Mercury Cell Room". The containers were properly marked D009 and dated but not covered. Upon requests by the inspectors these containers were covered. Also in this area were three 55 gallon drums. Each drum was covered, dated and labeled as a hazardous waste D009. However, the quantity of waste accumulated outside the cell room was greater than 55 gallons. Inside the cell room three additional containers were observed. Each of the containers was closed, marked and dated. The quantity of waste inside the cell room was also greater than 55 gallons. According to the facility the containers are removed from this area to the drum storage area weekly, sometimes more often. Generation of waste for the cell area is greater than one 55 gallon drum per day. Due to the large quantity of hazardous waste in this area, the facility must start conducting and documenting weekly inspections. Upstairs, in another section of the cell room, was one partially filled 55 gallon drum of waste. It was covered, dated and marked (D009).

Less than 90 day storage area

1. Potassium chloride brine sludge (K071) is transported once a week to two yard dumpsters in the bermed storage area. The dumpsters are covered, dated and labeled. Liquid is decanted from the dumpsters

daily and returned to the process. The solids are disposed in the surface impoundment.

2. Two thirty yard rollofts containing process waste were labeled D009, covered and dated 1-25-88 and 3-1-88. This waste is shipped off-site for disposal.

3. A one ton chlorine cylinder is used to store waste carbon tetrachloride. This is a change in the normal practice as a previous hauler will no longer vacuum this storage cylinder and haul the contents off site for disposal. The cylinder is labeled correctly and dated 12-16-87. Storage is adjacent to the rolloff containers. The company may transport the cylinder to the disposal site, have the contents disposed and return the empty cylinder.

Greater than 90 days.- Drum Storage

Drums of hazardous waste are stored in a fenced and bermed area. A sign on the outside of the fence stated "Hazardous Waste Storage Area" and "Authorized Personnel Only". The sign also indicated the maximum drum capacity and the type of waste (D009 and D002). Each drum was labeled with its contents, an internal control number and a date.

Surface Impoundment

Oxy Chem uses a surface impoundment with single synthetic liner for disposal of K071 waste, which is the brine purification muds from the chlorine production. K106 and D009 wastes which are the wastewater treatment filtercake with ash, previously hauled off-site, are now disposed in the impoundment. The facility will stop using the impoundment as of November 1988 unless a proposed delisting petition is granted.

No hazardous waste warning signs were observed at the surface impoundment or the railroad entrance to Oxy-Chem. Ground-water monitoring was conducted in November and in February.

Groundwater movement continues to flow in a south-to-north flow direction. Wells A-6, A-7, and A-13 are upgradient; wells A-14, A-15, A-16 are downgradient. Upgradient well A-13 triggered the student-t test for specific conductance and has since been resampled. The resample test also failed and has been reported on the annual report for 1987 which is attached to this report as exhibit 2. This well is deeper and it is believed to be in a strata that has naturally occurring chlorides.

Tank Storage

Waste carbon tetrachloride (U211) is stored in a 220 gallon closed tank with secondary containment. Generation is approximately twice weekly in a batch operation. Labels on and around the tank indicated U211 waste and "Danger", etc. U211 is shipped off-site every six to nine months. Generation rate was estimated at two to four gallons per week. Documented inspections are conducted daily for level, pressure and temperature.

In the same area there is a baffled tank for removing carbon tetrachloride (CCL4) and solids from rainwater. The CCL4 originates from a process air vent. The solids are cleaned from the tank by a vacuum truck once a year. Rainwater from the area is piped to the facility treatment plant, where the CCL4 is removed by carbon absorbers. The tank contents are not considered hazardous but as a precaution the tank residue is disposed as a hazardous waste.

Examples of inspection records are attached for your information as well as the 1987 annual report for hazardous waste activities. For additional information, see checklists.

RCRA Checklist for Surface Impoundments

(Subpart K Section 265.222 "General Operating Requirements")

R.O. USE

Inspection file No:

Reviewer:

Date Reviewed:

Form "K"

Name of Facility: Occidental Chemical Corp.

Address: River Rd., Delaware City, Del 19706

Generator ID Number: DED 003913266

Facility Inspection Representative: T. Horvath

Title: Env. Supervisor

Telephone Number: 302-834-3813

The questions contained in this checklist apply to owners and operators of facilities that use surface impoundments to treat, store, or dispose of hazardous waste, except as Part 265 provides otherwise.

Part. Regs.
C.F.R.
Part:

- | | | | |
|------------------------|--|--------------------------------------|--|
| 222 | 1. Is 2 ft. of freeboard maintained in the surface impoundment? | <input checked="" type="radio"/> Yes | <input type="radio"/> No |
| 223 | 2. Do all earthen dikes have protective covers (e.g., grass, shale or rock) to minimize wind and water erosion and to preserve dike structural integrity? | <input checked="" type="radio"/> Yes | <input type="radio"/> No |
| 225(a)
(1) &
(2) | 3. Are waste analyses conducted or written documentation obtained before placing a substantially different hazardous waste into a surface impoundment used for storage or treatment? | N/A | <input checked="" type="radio"/> Yes <input checked="" type="radio"/> No |
| 226(a)
(1) | 4. Is the freeboard level inspected at least once each operating day? | <input checked="" type="radio"/> Yes | <input type="radio"/> No |
| 226(a)
(2) | 5. Is the surface impoundment, including dikes and vegetation, inspected once per week to detect leaks or deterioration or failures in the impoundment? | <input checked="" type="radio"/> Yes | <input type="radio"/> No |
| | 6. Are the results of these inspections recorded in an inspection log or summary? | <input checked="" type="radio"/> Yes | <input type="radio"/> No |
| 229(a) | 7. Are ignitable or reactive wastes stored in a surface impoundment: If so, | N/A | <input checked="" type="radio"/> Yes <input checked="" type="radio"/> No |
| 229(a)
(1) | a) Is the waste treated, rendered, or mixed before or immediately after placement in the impoundment so that the resulting waste, mixture or dissolution of material no longer meets the definition of ignitable or reactive waste under parts 261.21 or 261.23 of the RCRA regulations? | N/A | <input checked="" type="radio"/> Yes <input type="radio"/> No |

.230

b) Are incompatible wastes segregated in separate surface impoundments so that spontaneous reactions are avoided?

N/A

Yes No

Inspector's Name: _____

Title: _____

Agency: _____

Office location: _____

Date of Inspection: _____

Inspector's Name: _____

Title: _____

Agency: _____

Office location: _____

Date of Inspection: _____

RCRA Checklist for Tanks

(Subpart J Section 265.192 - "General Operating Requirements")

R.O. USE

Inspection file No:

Name of Facility: Occidental Chemical Corp.

Address: River Rd, Delaware City, Del. 19706

EPA Generator ID Number: DED 003913246

Facility Inspection Representative: T. Horvath

Title: Env. Supervisor

Telephone Number: 302-834-3813

Reviewer:

Date Reviewed:

Form "J"

The questions contained in this checklist apply to owners and operators of facilities that use tanks to treat or store hazardous waste, except as Section 265.1 provides otherwise.

Pert. Regs.
40 C.F.R.
Part:

- | | | | |
|-------------------------|---|--------------------------------------|-------------------------------------|
| 265.17(b) | 1. Are all tanks in good condition, i.e., not showing signs of leakage, corrosion, or any other deterioration? | Yes <input type="radio"/> | No <input checked="" type="radio"/> |
| 265.192(c) | 2. Are uncovered tanks operated to ensure a minimum of 2 ft. of freeboard? | Yes <input type="radio"/> | No <input checked="" type="radio"/> |
| 265.192(c) | 3. If not, is the tank equipped with a containment structure (e.g., dike or trench), a drainage control system, or a diversion structure (e.g., standby tank) with a capacity that equals or exceeds the volume of top 2 ft. of the tank? | Yes <input type="radio"/> | No <input checked="" type="radio"/> |
| 265.192(d) | 4. Are tanks with continuous inflow of hazardous wastes equipped with a means to stop this inflow (e.g., waste feed cut-off system or by-pass to a standby tank)? | Yes <input type="radio"/> | No <input checked="" type="radio"/> |
| 265.193(a)
(1) & (2) | 5. Are waste analyses conducted or written documentation obtained before placing a substantially different hazardous waste into a tank used for storage or treatment? | Yes <input type="radio"/> | No <input checked="" type="radio"/> |
| 265.194(a)
(1) | 6. Are daily inspections conducted for discharge control equipment (e.g., by-pass systems, waste feed cutoff systems and drainage systems)? | Yes <input checked="" type="radio"/> | No <input type="radio"/> |
| 265.194(a)
(2) | 7. Is data gathered from monitoring equipment (e.g., pressure and temperature gauges) at least once each operating day? | Yes <input checked="" type="radio"/> | No <input type="radio"/> |
| 265.194(a)
(3) | 8. Is the level of waste in the tank checked at least once each operating day? | Yes <input checked="" type="radio"/> | No <input type="radio"/> |

265.194(a) (4)	9. Is (are) the tank (or tanks) inspected weekly to detect corrosion or leaking of fixtures or seams?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
	10. Are the results of these inspections recorded in an inspection log or summary?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
65.198	11. Are ignitable or reactive wastes stored in tanks? If so,	<input type="radio"/> Yes	<input checked="" type="radio"/> No
65.198(a) (1)	a) Is the waste treated, rendered, or mixed before or immediately after placement in the tank so that the resulting waste, mixture, or dissolution of materials no longer meets the definition of ignitable or reactive wastes under Parts 261.21 or 261.23 of the RCRA Regs?	<input type="radio"/> Yes	<input type="radio"/> No
65.198(a) (2)	b) Is the waste stored or treated in such a way that it is protected from any material or conditions which may cause the waste to ignite or react?	<input type="radio"/> Yes	<input type="radio"/> No
65.198(b)	c) Is the owner/operator of a facility which treats or stores ignitable or reactive wastes in covered tanks in compliance with the National Fire Protection Association's (NFPA's) buffer zone requirements for tanks contained in tables 2-1 through 2-6 of the "Flammable and Combustible Code - 1977"?	<input type="radio"/> Yes	<input type="radio"/> No

Inspector's Name : _____
Title: _____
Agency: _____
Office location: _____
Date of Inspection: _____

Inspector's Name: _____
Title: _____
Agency: _____
Office location: _____
Date of Inspection : _____

RCRA Checklist for Use and Management of Containers
Subpart I Section 265.170 - "General Operating Requirements"

R.O. USE

Inspection file No:

Reviewer:

Date Reviewed:

Form "1"

Name of Facility: Occidental Chemical Corp.
Address: River Rd., Delaware City, De 19706
Generator ID Number: DE D 003913266
Facility Inspection Representative: T. Howarth
Title: Env. Supervisor
Telephone Number: 302-834-3800 21-3813

Questions contained in this checklist apply to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as Section 265.1 provides otherwise.

t. Regs.
C.F.R.
t:

- | | | | |
|----------------|--|--------------------------------------|-------------------------------------|
| 171 | 1. Are all containers in good condition, i.e., not showing signs of leakage or corrosion or any other deterioration/deformation? | <input checked="" type="radio"/> Yes | <input type="radio"/> No |
| 171 | 2. Are containers lined or made of materials compatible with hazardous wastes placed into them so that the container will not react or corrode with the hazardous wastes? | <input checked="" type="radio"/> Yes | <input type="radio"/> No |
| 173(a) | 3. Are all containers holding hazardous waste kept closed during storage? <i>2 dumpsters of D009 outside cell bldg. covered during inspection by request</i> | <input type="radio"/> Yes | <input checked="" type="radio"/> No |
| 174 | 4. Are areas where hazardous waste containers are stored inspected by the owner/operator at least once a week? | <input checked="" type="radio"/> Yes | <input type="radio"/> No |
| 15(d)
15(b) | 5. Is an inspection log maintained? | <input checked="" type="radio"/> Yes | <input type="radio"/> No |
| 176 | 6. Are containers holding ignitable or reactive waste located at least 50 ft. from the facility's property line? <i>N/A</i> | <input type="radio"/> Yes | <input type="radio"/> No |
| 177(a) | 7. Are incompatible wastes placed in the same container? (See Appendix 5 for examples.) | <input type="radio"/> Yes | <input checked="" type="radio"/> No |
| 177(c) | 8. Are storage containers holding hazardous wastes which are incompatible with nearby materials stored in containers, tanks, piles, or surface impoundments separated by dikes, berms, walls, or other devices? <i>N/A</i> | <input type="radio"/> Yes | <input type="radio"/> No |

minimum of 10' according to State.

Feb. reg - berms, dikes, sep - exception - viscous material

810 7019600

Office location:

8th -

१ : ३५३३

Inspector's Name:

State of Inspection:

:H097326C1 0277

1. 1941 : 1942 : 1943 : 1944 : 1945 : 1946 : 1947 : 1948 : 1949 : 1950 : 1951 : 1952 : 1953 : 1954 : 1955 : 1956 : 1957 : 1958 : 1959 : 1960 : 1961 : 1962 : 1963 : 1964 : 1965 : 1966 : 1967 : 1968 : 1969 : 1970 : 1971 : 1972 : 1973 : 1974 : 1975 : 1976 : 1977 : 1978 : 1979 : 1980 : 1981 : 1982 : 1983 : 1984 : 1985 : 1986 : 1987 : 1988 : 1989 : 1990 : 1991 : 1992 : 1993 : 1994 : 1995 : 1996 : 1997 : 1998 : 1999 : 2000 : 2001 : 2002 : 2003 : 2004 : 2005 : 2006 : 2007 : 2008 : 2009 : 2010 : 2011 : 2012 : 2013 : 2014 : 2015 : 2016 : 2017 : 2018 : 2019 : 2020 : 2021 : 2022 : 2023 : 2024 : 2025 : 2026 : 2027 : 2028 : 2029 : 2030 : 2031 : 2032 : 2033 : 2034 : 2035 : 2036 : 2037 : 2038 : 2039 : 2040 : 2041 : 2042 : 2043 : 2044 : 2045 : 2046 : 2047 : 2048 : 2049 : 2050 : 2051 : 2052 : 2053 : 2054 : 2055 : 2056 : 2057 : 2058 : 2059 : 2060 : 2061 : 2062 : 2063 : 2064 : 2065 : 2066 : 2067 : 2068 : 2069 : 2070 : 2071 : 2072 : 2073 : 2074 : 2075 : 2076 : 2077 : 2078 : 2079 : 2080 : 2081 : 2082 : 2083 : 2084 : 2085 : 2086 : 2087 : 2088 : 2089 : 2090 : 2091 : 2092 : 2093 : 2094 : 2095 : 2096 : 2097 : 2098 : 2099 : 2100 : 2101 : 2102 : 2103 : 2104 : 2105 : 2106 : 2107 : 2108 : 2109 : 2110 : 2111 : 2112 : 2113 : 2114 : 2115 : 2116 : 2117 : 2118 : 2119 : 2120 : 2121 : 2122 : 2123 : 2124 : 2125 : 2126 : 2127 : 2128 : 2129 : 2130 : 2131 : 2132 : 2133 : 2134 : 2135 : 2136 : 2137 : 2138 : 2139 : 2140 : 2141 : 2142 : 2143 : 2144 : 2145 : 2146 : 2147 : 2148 : 2149 : 2150 : 2151 : 2152 : 2153 : 2154 : 2155 : 2156 : 2157 : 2158 : 2159 : 2160 : 2161 : 2162 : 2163 : 2164 : 2165 : 2166 : 2167 : 2168 : 2169 : 2170 : 2171 : 2172 : 2173 : 2174 : 2175 : 2176 : 2177 : 2178 : 2179 : 2180 : 2181 : 2182 : 2183 : 2184 : 2185 : 2186 : 2187 : 2188 : 2189 : 2190 : 2191 : 2192 : 2193 : 2194 : 2195 : 2196 : 2197 : 2198 : 2199 : 2200 : 2201 : 2202 : 2203 : 2204 : 2205 : 2206 : 2207 : 2208 : 2209 : 2210 : 2211 : 2212 : 2213 : 2214 : 2215 : 2216 : 2217 : 2218 : 2219 : 2220 : 2221 : 2222 : 2223 : 2224 : 2225 : 2226 : 2227 : 2228 : 2229 : 2230 : 2231 : 2232 : 2233 : 2234 : 2235 : 2236 : 2237 : 2238 : 2239 : 2240 : 2241 : 2242 : 2243 : 2244 : 2245 : 2246 : 2247 : 2248 : 2249 : 2250 : 2251 : 2252 : 2253 : 2254 : 2255 : 2256 : 2257 : 2258 : 2259 : 2260 : 2261 : 2262 : 2263 : 2264 : 2265 : 2266 : 2267 : 2268 : 2269 : 2270 : 2271 : 2272 : 2273 : 2274 : 2275 : 2276 : 2277 : 2278 : 2279 : 2280 : 2281 : 2282 : 2283 : 2284 : 2285 : 2286 : 2287 : 2288 : 2289 : 2290 : 2291 : 2292 : 2293 : 2294 : 2295 : 2296 : 2297 : 2298 : 2299 : 2300 : 2301 : 2302 : 2303 : 2304 : 2305 : 2306 : 2307 : 2308 : 2309 : 2310 : 2311 : 2312 :

RCRA CHECKLIST FOR INSPECTION

Name of Facility: Occidental Chemical Corp.
 Address: River Road, Delaware City, De
19706
 EPA TSD ID Number: DED 063913266
 Facility Inspection Representative: T. Horvath
 Title: Environmental Supervisor
 Telephone: 302-834-3800

Inspection File

No. _____

Reviewer _____

Date reviewed _____

Form "3"

SITE CHARACTERIZATION

(Please denote if the facility presently treats, stores, or disposes of hazardous waste. Also, mark the appropriate sub-category that occurs at the particular facility.)

TREATER

☐ Filtration
☐ Incineration
☐ Thermal Reduction
☒ Recycling/Recovery
☐ Chem/Phys/Bio Treatments
☐ Waste Oil
☐ Reprocessing
☒ Solvent Recovery
☐ Other _____

STORER

☐ Open Pile
☒ Surface Impoundment
☒ Drum
☒ Above ground tank(s)
☐ Below ground tank(s)
☐ Other _____

DISPOSER

☒ Landfill operation
☐ Land treatment
☒ Surface Impoundment
☐ Other _____

INSPECTION PROCEDURE

1. Does the facility generate hazardous waste? (Yes)

Note: Please complete the generators checklist, Numbers 1 thru 8, if the TSD facility generates hazardous wastes which are disposed off-site.

2. Does the on-site or off-site facility have a written waste analysis plan? (Yes)

3. Does the TSD facility have a 24-hour surveillance system which monitors and controls entry to the active portion of the facility? (Yes)

If Not

- A. Does the facility have an artificial or natural boundary which surrounds active portions of the facility and, n/a

- B. Does the facility have means to control entry at all times, i.e., gates, attendants, locked entrances, etc.? (Yes) *except trains*

4. Does the TSD facility have a restricted access sign posted at each entrance to the active portion of the facility? An example would be: "Danger-Unauthorized Personnel Keep Out!" Yes

5. Does the TSD facility have a written schedule for inspecting all emergency equipment and monitoring equipment, security devices, and operating and structural equipment.

Yes No

6. Have facility personnel successfully completed a program of classroom training or on-the-job training in hazardous waste management procedures?

Yes No

7. Does the TSD facility maintain a record of job titles for all personnel that are involved with the handling of hazardous waste and the name of the employee filling each job?

Yes No

8. Does the TSD facility have on record a written position description for each job title noted in Question #7?

Yes No

9. Does the facility maintain a written description for the type and amount of introductory and continuing training for those employees noted in Question #7?

Yes No

10. Does the TSD facility have installed the following equipment:

A. An internal communications or alarm system capable of providing immediate emergency instructions to facility personnel if the hazardous waste storage area is threatened by fire or explosion?

Yes No

B. A device at the scene of hazardous waste TSD operations capable of summoning emergency assistance from Police, Fire departments, etc.?

Yes No

C. Fire control equipment and an adequate supply of fire fighting water or fire suppression chemicals?

Yes No

11. Does the TSD facility have adequate aisle space to allow the unobstructed movement of personnel and equipment during emergencies?

Yes No

12. Does the facility have a contingency plan which contains the following elements:

Yes No

A. A detailed description of emergency procedures facility personnel will implement in response to fires, explosions, or unplanned releases of hazardous wastes to air, soil, and water?

Yes No

B. A detailed description of arrangements formally agreed to by local police, fire departments, and State and local emergency teams to provide assistance during emergency situations?

Yes No

C. A listing of names, addresses, and phone numbers of the TSD facility emergency response coordinators?
Note: This listing should include names and phone numbers of emergency coordinators available on twenty-four hour basis.

Yes No

D. A list of appropriate emergency equipment necessary to cope with emergencies at the TSD facility?

Yes No

Emergency - refer to chemical
Environmental incident - 1st person to call
Plan A - inside only
Plan B - outside assistance

Checked Wed. at noon

except cell

Non-flammable waste

13. Does the facility have at all times at least one employee either on-call or on the site who is responsible for coordinating all emergency response measures? ☒ Yes ☐ No
14. Does the on-site or off-site facility have a written operating record which contains the following information: *Bure are supervisors keep that*
- (b) (1) A. A description and the quantity of each hazardous waste received/managed at the on-site or off-site treatment, storage or disposal facility. ☒ Yes ☐ No
- (b) (2) B. The location of each hazardous waste managed at the on-site or off-site facility. *Part B.* ☒ Yes ☐ No
- (b) (3) D. Copies of facility specific waste analysis as required by §§ 265.193, 265.225, 265.252, 265.273, 265.345, 265.375 and 265.402. ☒ Yes ☐ No
- (b) (3) & C. Written results of all chemical/Physical analyses of each waste treated, stored or disposed of at the facility. *1/yr* ☒ Yes ☐ No
- (b) (4) E. Summary reports of incidents requiring implementation of the contingency plan. *N/A* *N/A* Yes ☐ No
- (b) (5) & (d) F. Records and results of all inspections (see #5) in an inspection log or summary. ☒ Yes ☐ No
- (b) (6) G. Results from groundwater monitoring (For surface impoundments, land treatment or land disposal facilities). ☒ Yes ☐ No
- (b) (7) H. Closure cost estimate. *Updated yearly* ☒ Yes ☐ No
- I. Post Closure cost estimate (land disposal facilities only) ☒ Yes ☐ No
15. Has the TSD facility operator completed a written closure or post closure plan in order to meet the May 1981 date for implementation of these requirements?
- Does the TSD facility have:
- A. Written Closure Plan ☒ Yes ☐ No
- B. Written Post Closure Plan (land disposal Facility only) ☒ Yes ☐ No
16. Does the TSD facility receive waste from off-site generators? Yes ☐ No ☒
- If yes, does the operator implement the following procedures:
- 13(a) (4) A. Inspect or analyze incoming wastes and compare with manifest for each shipment received at the facility. Yes ☒ No ☐
- 13(b) B. Specify procedures in the waste analysis plan to carry out #16A. Yes ☐ No ☐
- 71 C. Sign and date all manifest copies? *N/A* Yes ☐ No ☐
- 71 D. Return copies of the manifest to the generator and transporter? Yes ☐ No ☐
- 71 E. Retain copies of all manifests at the facility for three years? Yes ☐ No ☐

17. Has the operator installed a groundwater monitoring system which consists of:

Yes No

A. At least one well hydraulically upgradient at the limit of waste management area?

Yes No

B. At least 3 wells hydraulically downgradient at the limit of the waste management area?

Yes No

18. Are all monitoring wells cased in a manner to prevent contamination of samples and groundwater?

Yes No

19. Do wells monitor groundwater in the uppermost aquifer underlying the facility?

Yes No

20. Has the operator developed and followed groundwater sampling and analysis plan?

Yes No

21. Does the plan include methods for establishing concentrations of parameters characterizing...

Yes No

A. Groundwater Suitability. (265.92(b)(1)).

Yes No

B. Groundwater quality (265.92(b)(2)).

Yes No

C. Groundwater Contamination (265.92(b)(3)).

Yes No

22. Has the groundwater monitoring program been implemented by a qualified geologist or geotechnical engineer?

Yes No

23. The inspector should check for the following conditions at the TSD facility:

A. Open fires

Yes No

B. Fumes or gases

Yes No

C. Leaks or corrosion in containers or other storage structures

Yes No

D. Leachate to receiving streams

Yes No

E. Malfunction of equipment

Yes No

F. Bulging drums

Yes No

G. Excessive heat generation from storage facilities, lagoons, storage piles, etc.

Yes No

24. Please provide detailed comments and explanations on specific checklist items or problems encountered during the TSD facility inspection. For instance, industry requests for clarification of specific rules and regulations and their applicability at the facility can be noted below or described in a separate memo attached to the inspector's checklist.

Inspector's Name: _____

Title: _____

Agency: _____

Office Location: _____

Date of Inspection: _____

Inspector's Name: _____

Title: _____

Agency: _____

Office location: _____

Date of Inspection: _____

RCRA CHECKLIST FOR INSPECTION OF GENERATORS

NO USE

Name of Facility: Occidental Chemical Corp.

Inspection file

Address: Delaware City, Delaware

No. _____

Reviewer _____

EPA Generator ID Number: DED 003913266

Date Reviewed: _____

Facility Inspection Representative: Thomas Horvath

Form "A"

Title: Environmental Supervisor

Telephone Number: 302-834-3800

Pert. Regs.
40 C.F.R.

1. Please provide a brief narrative explaining the type of work activity that occurs at the generator.

2. Does the generator disposes of its wastes....

A. On-site

(Circle one)

B. Off-Site

Note: If on-site, then checklist for both a generator and TSD facility must be completed; if on-site more than 90 days.

3. Are 1000 kg (2200 Lbs) or more of hazardous waste produced by the generator facility in a month? (If the amount is less than 1,000 kg/month, then the facility qualifies as a small generator and Form C should be completed instead of Form A.)

Yes ☒ No

4. What categories of hazardous wastes result from the generator's facility?

A. Ignitable wastes

Yes ☒ No

B. Reactive wastes

Yes ☒ No

C. Corrosive wastes

Yes ☒ No

D. EP Toxic wastes

Yes ☒ No

E. RCRA Listed Wastes

Yes ☒ No

Types K071 U211 _____
K106 _____

5. Is the generator presently...

Safety-Kleen degrades

A. Treating hazardous waste?

Yes ☒ No

B. Storing hazardous wastes longer than 90 days?

Yes ☒ No

C. Disposing hazardous waste?

Yes ☒ No

Note: If the generator performs any of the activities noted in Question 5, then the inspector must complete Form B, entitled "RCRA Checklist for inspection of hazardous waste treatment, storage and disposal facilities."

262.20

6. In a manifest system currently in operation at the generator's facility so that offsite shipment of hazardous wastes can be tracked?

Yes ☒ No

7. Please inspect the generator's manifest for the following information

262.20

- A. Is the TSD facility which receives a generator's hazardous waste identified by name, address, and EPA ID number?

Yes No

262.20

- B. Is an alternative facility designated in case of an emergency? (Optional)

Yes No

- C. Is a serialized manifest document number included on the form?

Yes No

262.21

- D. Is the generator's name, address, telephone number and EPA ID number included on the form?

Yes No

- E. Is the name and identification number of each transporter included on the form?

Yes No

- F. Is a description of the generator's hazardous waste to be treated, stored, or disposed included on the manifest?

Yes No

- G. Is the quantify of each waste by units of weight or volume and the type and number of containers loaded in the transport vehicle included on the manifest form?

Yes No

- H. Is the following certification noted on the generator's manifest form and is the certification acknowledged by the generator's signature.

Yes No

"This is to certify that the above-named materials are properly classified, described, packaged, marked, labeled and are in proper condition for transportation according to the available regulations of the DOT and EPA."

262.22

- I. Are there adequate copies of the manifest available for generator, transporter, and TSD's?

Yes No

262.34(a)(1)

8. Is all hazardous waste being shipped off-site by the generator within 90 days to a designated facility or placed in an on-site facility either of which has interim status or a Federal hazardous waste treatment, storage or disposal permit?

Yes No

262.34(a)(3)

- A. Is the date accumulation of waste began clearly marked on each container?

Yes No

where applicable

262.34(a)(2)

- B. Are storage containers or tanks in good condition, i.e., no corrosion, leaking or structural deformations?

Yes No

- C. Starting at the time of initial accumulation are the storage containers

262.34(a)(4)

- 1) Labeled

Yes No

262.34(a)(4)

- 2) Marked

Yes No

262.34(a)(2)

- 3) Packaged

Yes No

as containing a particular hazardous waste in accordance with DOT regulations?

Questions 9-15 apply to generators who accumulate wastes in a non-permitted facility.

265.16(a)

9. Have facility personnel successfully completed a program of classroom training or on-the-job training in hazardous waste management procedures?

Yes No

265.16(d)

10. Does the generator facility maintain a record of job titles for personnel that are involved with hazardous waste management and the name of the employee filling each job?

Yes No

265.16(d)(2)

11. Does the generator facility have on record a written position description for each job title noted in Question #10?

Yes No

265.16(d)(3)

12. Does the facility presently maintain a written description of the type and amount of introductory and continuing training for those employees noted in Question #10?

Yes No

265.32(a)

13. Does the generator facility have installed the following equipment:

A. An internal communications or alarm system capable of providing immediate emergency instructions to facility personnel if the hazardous waste storage area is threatened by fire or explosion?

Yes ☒ No

B. A device at the scene of hazardous waste generator operations capable of summoning emergency assistance from Police, Fire departments, etc.?

Yes ☒ No N/A

C. Fire control equipment and an adequate supply of fire fighting water or fire suppression chemicals?

Yes ☒ No

265.35

14. Does the generator facility have adequate aisle space to allow the unobstructed movement of personnel and equipment during emergencies?

Yes ☒ No

265.50

15. Does the facility have a contingency plan which contains the following elements:

A. Detailed description of emergency procedures facility personnel will implement in response to fires, explosions, or unplanned releases of hazardous wastes to air, soil, and water?

Yes ☒ No

265.52(c)

B. A detailed description of arrangements formally agreed to by local police, fire departments, and State and local emergency teams to provide assistance during emergency situations?

Yes ☒ No

265.52(d)

C. A listing of names, addresses, and phone numbers of the generator facility emergency response coordinators?

Yes ☒ No

Note: This listing should include names and phone numbers of emergency coordinators available on twenty-four hour basis.

265.52(e)

D. A list of appropriate emergency equipment necessary to cope with emergencies at the generator facility?

Yes ☒ No

265.53

16. Has a copy of the contingency Plan been submitted to local police, fire departments, hospitals, and emergency response teams that may be called on to provide emergency services.

Yes No

17. Please provide detailed explanation or comments on specific questions or problems encountered during the inspection. For instance, industry requests for exclusions from optional portions of the regulation or for clarification of specific RCRA rules and regulations and their applicability at the facility can be noted below or described in a separate memo attached to the inspector's checklist.

Inspector's Name: _____

Title: _____

Agency: _____

Office
location: _____Date of
Inspection: _____

Inspector's Name: _____

Title _____

Office
Location _____Date of
Inspection: _____

Disposal

Impoundment

Yes or No

Comment or Remedial Actions Necessary

Active Cell #2

1. Is there evidence of erosion of the interior or exterior of the dike?
 - a) Is vegetation complete?
2. Is there ponded water in the impoundment?
 - a) If yes, is there two feet of freeboard maintained?
 - b) If no, have the sludges been dewatered recently?
 - c) If no, is there two feet of freeboard available?
3. Is there leachate present in the sump?
4. Is the sump pump operational?
5. Is there evidence of unauthorized disposal?
6. Is there evidence of spills near the impoundment?

Inactive Cell #1

1. Is there evidence of erosion of the cap system?
 - a) Is vegetation complete?
2. Is there ponded water on the cap?
3. Is there leachate present in the sump?
4. Is the sump pump operational?

Drum Storage

1. Are all containers properly labeled and dated?
2. Is there any evidence of drum deterioration?
3. Is there a two foot aisle between drum pallets?
4. Is there ponded water in the containment area?
5. Are corrosive wastes placed in their specified area?
6. Is the warning sign present and in good condition?
7. Is the fencing and storage area in good condition?

Mercury Retorts

1. Is the area free of mercury and trash?
2. Is the ash dumpster properly labeled?
3. Level of waste in the ash dumpster Y3

Mercury Treatment

1. Is all sludge in the dumpsters?
 - Shriver
 - Lamella
2. Are the dumpster covers in place and in good condition?
3. Level of waste in dumpsters- Lamella Y2 Shriver Y2 Scrap Y4

Chlorination Pit

1. Are the drip pans draining properly?
2. Is the area free of trash?
3. Is there adequate oil adsorbent pads?

Batch Neutralization

1. Spent acid level 6'8" 9'2"
2. Are the pad sump & level controls working properly?
3. Are the washings sump pump & level controls working properly?

8 psi

8 psi

7611
87498413 shriver
7611

8744

8809

BRINE AREA DAILY WASTE LOGSHEET

KCl Dumpsters

	<u>Location</u>
	<u>East/West</u> <u>Action Taken</u>
1) Is there any sign of leakage from dumpster?	<u>No</u>
2) Do the lids on the dumpster latch?	<u>Yes</u>
3) Are the lids on the dumpster closed?	<u>Yes</u>
4) Is the hose lying on the enclosed area?	<u>Yes</u>
5) Is there any sign of spillage in the area?	<u>No</u>
6) Level of material in dumpster.	<u>1 mt 2 1/8 3 3/4</u>

Saturator Sludge Dumpster

	<u>Yes / No</u>	<u>Action Taken</u>
1) Is dumpster located on contained pad?	<u>Yes</u>	
2) Level of material in dumpster.	<u>MT</u>	

Brine Sludge Pads

1) Is there any liquid in North wall?	<u>Leak</u>
2) Is there any liquid in East wall?	<u>No</u>
3) Is there any liquid in South wall?	<u>No</u>
4) Is there any liquid in West wall?	<u>Yes</u>
5) Amount of freeboard above liquid level:	North Pad <u>1'0"</u> South Pad <u>2'6"</u>

Other Comments _____

Date 2-29-88

Time 0800

Signature: _____

Michael O'Key

Month FEB 1988

HAZARDOUS WASTE LOGSHEET - COMPRESSION DAILY LOG

DATE	LEVEL IN TANK	PRESSURE (+) OR VACUUM (-)	TEMPERATURE OF K.O. DRUMS #1 #2 DELAVAL	INSPECTION COMMENTS	INSPECTED BY TIME OPERATOR
01	0	3"	1-58° 3-51°	OK	0725 Joe
02	0	3"	1-60° 3-56°	OK	0640 <i>Stoney</i>
03	0	2"	1-31° 3-25°	OK	0640 <i>Stoney</i>
04	0	2"	1+66° 3+37°	OK	7:10 J.L.
05	0	2"	1+30° 3+28°	OK	12:15 J.L.
06	0	2"	1+20° 3+16°	OK	0810 <i>(ZS)</i>
07	0	2"	1+24° 3+8°	OK	0710 <i>(ZS)</i>
08	0	2"	1+46° 3+17°	OK	0715 <i>(ZS)</i>
09	0	2"	1-31° 3-25°	OK	0710 Joe
10	0	3"	1-34° 3-31°	OK	0700 Joe
11	0	2"	1+43° 3+39°	OK	0644 <i>Stoney</i>
12	0	2"	1+37° 3+29°	OK	0640 <i>Stoney</i>
13	0	2"	1+24° 3-+2°	OK	7:00 J.L.
14	0	2"	1+17° 3--11°	OK	10:10 J.L.
15	0	2"	1+36° 3+31°	OK	8:00 J.L.
16	0	3"	#1+43° #3-+39°	OK	0640 <i>(ZS)</i>
17	0	3"	#1+30° #3+20°	OK	0730 <i>(ZS)</i>
18	0	3"	#1+42° #3 32°	OK	0710 <i>(ZS)</i>
19	0	3"	#1+40° #3+38°	OK	0640 <i>Stoney</i>
20	0	3"	#1 40° #3 32°	OK	0645 <i>Stoney</i>
21	0	3"	#1 38° #3-30°		0640 <i>Stoney</i>
22	0	3"	#1+40° #3-+23°	OK	0635 <i>Stoney</i>
23	0	3"	1+43° 3+38°	OK	8:30 J.L.
24	0	3"	1+33° 3+14°	OK	8:15 J.L.
25	1/2"	2"	#1+30° #3+30°	OK	0715 <i>(ZS)</i>
26	1/2"	3"	#1+30° #3+24°	OK	0648 <i>(ZS)</i>
27	1/2"	3"	#1+38° #3+33°	OK	0715 <i>(ZS)</i>
28	1/2"	3"	1+56° 3+90°	OK	1845 J.L.
29	1/2"	3"	#1+51° #3+29°	OK	0640 <i>Stoney</i>
30					
31					

EXHIBIT 2



Occidental Chemical Corporation

March 1, 1988

Mr. Jay Brahmbhatt
Waste Management Division
Department of Natural Resources
and Environmental Control
P.O. Box 1401
Dover, DE 19903

RE: Occidental Chemical Corporation
EPA I.D.#DED003913266
RCRA Annual Report

Dear Mr. Brahmbhatt:

Please find attached a completed RCRA annual report for the subject facility.

If there are any questions, please contact this office at 302-834-3831.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Thomas D. Horvath".

Thomas D. Horvath
Environmental Supervisor

mam

CC: Thomas Anderson
DNREC
New Castle

OxyChem

Electrochemicals Division
River Road, New Castle, Delaware 19701

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL
OR ENTER:SITE NAME Occidental Chemical Corp.Delaware City, DEEPA ID NO. D1E1D10101319113121616DELAWARE DEPARTMENT
OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

1987 Hazardous Waste Report

IDENTIFICATION AND
CERTIFICATION

FORM

IC

WHO MUST COMPLETE THIS FORM?

Form IC must be completed by every site that received this package.

INSTRUCTIONS:

Please read the detailed instructions beginning on page 4 of the 1987 Hazardous Waste Report instruction booklet before completing this form.

Complete Sections I through IV and Sections VI through IX immediately. Complete Section V, certification, after you have finished the full report package.

SEC.

I.

Site name and physical location which may differ from the mailing address. Complete items A through G.

Mark ☒ for items A, B, C, D, F, and G if same as label; if different, enter corrections. If label is absent, enter information.

A. Site/company name

Same as label ☒

or —

B. EPA ID No.

Same as label ☒

or —

C. Address number and street name of physical location - If not known, enter industrial park, building name or other physical location description

Same as label ☐

or —

River Road

D. City, town, village, etc.

Same as label ☐

or —

Delaware City

E. County

New Castle

F. State

Same as label ☐

or —

D E

G. Zip Code

Same as label ☐

or —

1 9 7 0 6 - 0 2 8 9

SEC.

II.

Mailing address of site.

Mark ☒ for A, B, C, and D if same as label; if different, enter corrections.

A. Number and street name of mailing address

Same as label ☒

or —

B. City, town, village, etc.

Same as label ☒

or —

C. State

Same as label ☒

or —

D. Zip Code

Same as label ☒

or —

SEC.

III.

Name, title, and telephone number of the person who should be contacted if questions arise regarding this report.

A. Please print: Last name

First name

M.I.

B. Title

C. Telephone

Horvath

Thomas

D.

Environmental
Supervisor

3 0 2 8 3 4 - 3 8 3 1

Extension

SEC.

IV.

Enter the Standard Industrial Classification (SIC) Code that describes the principal products, group of products, produced or distributed, or the services rendered at the site's physical location. Enter more than one SIC Code only if no one industry description includes the combined activities of the site. SIC codes are listed beginning on page 1 of the 1987 Hazardous Waste Report Codebook.

A.

2 8 1 2

B.

C.

D.

E.

F.

SEC.

V.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Please print: Last name

First name

M.I.

Title

Horvath

Thomas

D.

Environmental Supervisor

Signature

Thomas D. Horvath

Date of signature

10 2 12 9 18 8
Mo. Day Yr.

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL
OR ENTER:

SITE NAME Occidental Chemical Corporation
Delaware City, DE

EPA ID NO. DELD00039113121616



DELAWARE DEPARTMENT
OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

1987 Hazardous Waste Report

WASTE MINIMIZATION

PART I

FORM
WM

WHO MUST COMPLETE THIS FORM?

Form WM Part I, describing efforts undertaken to implement waste minimization programs, must be completed by all generators required to file an Annual/Biennial Report. This requirement was established in response to statutory provisions included in the Hazardous and Solid Waste Amendments of 1984 (HSWA).

NOTE: Generators shipping hazardous waste off site are required to certify, on Item 16 of the Uniform Hazardous Waste Manifest, that they have a program in place to reduce, to the degree determined economically practicable, the volume and toxicity of hazardous waste generated. A similar certification must also be made by generators who have obtained a RCRA treatment, storage, or disposal permit. Consistent with these certification requirements, generators must report, on Form WM Part I, the efforts undertaken to implement waste minimization programs.

INSTRUCTIONS:

Please read the detailed instructions on page 8 of the 1987 Hazardous Waste Report instruction booklet before completing this form.

Answer questions 1 through 10. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

1. Did this site create or expand a source reduction and recycling program?

	1987		1986		Prior Years	
	Yes	No	Yes	No	Yes	No
Create	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Expand	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2. Did this site have a written policy or statement that outlined goals, objectives and methods for source reduction and recycling of hazardous waste?

	1987	1986	Prior Years
Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. What was the dollar amount of capital expenditures (plant and equipment) and operating costs devoted to source reduction and recycling of hazardous waste? ENTER ZERO (0) IF NONE.

	1987	1986	Prior Years
Capital expenditures	\$ <u>77,000</u>	\$ <u>84,000</u>	\$ <u>275,000</u>
Operating costs	\$ <u>17,000</u>	\$ <u>18,000</u>	\$ <u>20,000</u>

4. Did this site have an employee training program or provide incentives (bonuses, awards, personal recognition, etc.) to identify and implement source reduction and recycling opportunities and activities?

	1987		1986		Prior Years	
	Yes	No	Yes	No	Yes	No
Training	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Incentives	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Page ____ of ____

OVER -->

9. What factors have delayed or prevented implementation of on-site or off-site RECYCLING opportunities. MARK ☒ NEXT TO ALL THAT APPLY.

- ☐ a. Insufficient capital to install new recycling equipment or implement new recycling practices.
- ☐ b. Lack of technical information on recycling techniques applicable to this site's specific production processes.
- ☐ c. Recycling is not economically feasible: cost savings in waste management or production will not recover the capital investment.
- ☐ d. Concern that product quality may decline as a result of recycling.
- ☐ e. Requirements to manifest wastes inhibit shipments off site for recycling.
- ☐ f. Financial liability provisions inhibit shipments off site for recycling.
- ☐ g. Technical limitations of product processes inhibit shipments off site for recycling.
- ☐ h. Technical limitations of production processes inhibit on-site recycling.
- ☐ i. Permitting burdens inhibit recycling.
- ☐ j. Lack of permitted off-site recycling facilities.
- ☐ k. Unable to identify a market for recyclable materials.
- ☐ l. Other (SPECIFY) _____

10. Has this site requested or received technical information or financial assistance on source reduction and/or recycling practices from any of the following sources? MARK ☒ NEXT TO ALL THAT APPLY.

	1987		1986		Prior Years	
	Technical	Financial	Technical	Financial	Technical	Financial
a. Local government	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. State government	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Federal government	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Trade associations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Educational institutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Other parts of your firm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Other firms/consultants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. No request made	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
j. Other (conferences, literature, etc.) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL
OR ENTER:

SITE NAME Occidental Chemical Corporation

Delaware City, DE 19706

EPA ID NO. D, E, D, 0, 0, 3, 9, 1, 3, 2, 6, 6



DELAWARE DEPARTMENT
OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

1987 Hazardous Waste Report

WASTE MINIMIZATION

PART II

FORM
WM

WHO MUST COMPLETE THIS FORM?

Form WM Part II must be completed only by generators that engaged in an activity during 1987 that resulted in waste minimization.

Waste minimization means:

- (1) reduction in the volume and/or toxicity of hazardous waste generated as a result of source reduction; and/or,
- (2) reduction in the volume and/or toxicity of hazardous waste subsequently treated, stored, or disposed as a result of on-site or off-site recycling.

☐

Mark ☒ and do not complete this form if no waste minimization results were achieved during 1987.

INSTRUCTIONS:

Please read the detailed instructions on page 10 of the 1987 Hazardous Waste Report Instruction booklet before completing this form.

Make and complete a photocopy of this form for each hazardous waste minimized in 1987.

Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I	A. EPA hazardous waste code Instruction Page 11 <u>K1106</u>	B. State hazardous waste code Page 11 <u>K1106</u>	C. Product or service description Page 11 Chlor-Alkali Production (Mercury Cell Process)	D. Product or service SIC code Page 11 <u>2812</u>
E. Waste form code Page 11 <u>N24</u>	F. UOM Page 12 <u>T</u>	G. Density Page 12 <u>1.1</u> lbs/gal <input checked="" type="checkbox"/> sq	H. Source description: Page 12 Plate & Frame filter with diatomaceous earth filter aid	I. Source code Page 12 <u>10</u>

Sec. II	A. 1986 quantity generated Instruction Page 13 <u>255</u>	B. 1987 quantity generated Page 13 <u>250</u>	C. Production ratio Page 13 <u>0.9</u>	D. Toxicity change code Page 15 <u>2</u>
E. Waste minimization: recycling Page 15 Code 1. <u>0</u> 2. <u> </u> Quantity recycled <u>NA</u>			F. Waste minimization: source reduction Page 16 Code 1. <u>2</u> 2. <u> </u> 3. <u> </u> Quantity prevented <u>5</u>	

Sec. III	A. Narrative description of waste minimization project or activity and results achieved Instruction Page 23 Increased filter precoat life by minimizing amount of iron as wastewater pretreatment. As a result, the amount of waste generated (from precoat) is less. Quantity is an estimate. Toxicity reduction (mercury) due to wastewater recycling efforts completed in 1986.
----------	--

Sec.
IV.**Instructions:** Answer questions 1 through 4. Mark ☒ next to the effects produced by the source reduction and/or recycling activity reported on this form in Sections I through III.

1. What effect did this site's source reduction and/or recycling activity have on the quantity of water effluent produced by hazardous waste generation processes during 1987?
- ☐ a. Increase in the quantity of water effluent
- ☐ b. Decrease in the quantity of water effluent
- ☒ c. No effect on the quantity of water effluent
- ☐ d. Don't know
2. What effect did this site's source reduction and/or recycling activity have on the toxicity of water effluent produced by hazardous waste generation processes during 1987?
- ☐ a. Increase in the concentration of hazardous constituents
- ☐ b. Decrease in the concentration of hazardous constituents
- ☒ c. No effect on the concentration of hazardous constituents
- ☐ d. Don't know
3. What effect did this site's source reduction and/or recycling activity have on the quantity of air emissions produced by hazardous waste generation processes during 1987?
- ☐ a. Increase in the quantity of air emissions
- ☐ b. Decrease in the quantity of air emissions
- ☒ c. No effect on the quantity of air emissions
- ☐ d. Don't know
4. What effect did this site's source reduction and/or recycling activity have on the toxicity of the air emissions produced by hazardous waste generation processes during 1987?
- ☐ a. Increase in the concentration of hazardous constituents
- ☐ b. Decrease in the concentration of hazardous constituents
- ☒ c. No effect on the concentration of hazardous constituents
- ☐ d. Don't know

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL
OR ENTER:

SITE NAME Occidental Chemical Corporation

Delaware City, DE

EPA ID NO. DE D 0 0 3 9 1 3 2 6 6



DELAWARE DEPARTMENT
OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

1987 Hazardous Waste Report

WASTE MINIMIZATION

PART II

WHO MUST COMPLETE THIS FORM?

Form WM Part II must be completed only by generators that engaged in an activity during 1987 that resulted in waste minimization.

Waste minimization means:

- (1) reduction in the volume and/or toxicity of hazardous waste generated as a result of source reduction; and/or,
(2) reduction in the volume and/or toxicity of hazardous waste subsequently treated, stored, or disposed as a result of on-site or off-site recycling.

☐

Mark ☒ and do not complete this form if no waste minimization results were achieved during 1987.

INSTRUCTIONS:

Please read the detailed instructions on page 10 of the 1987 Hazardous Waste Report instruction booklet before completing this form.

Make and complete a photocopy of this form for each hazardous waste minimized in 1987.

Complete Sections I through IV. Throughout this form enter "DK" if the information requested is not known or is not available; enter "NA" if the information requested is not applicable.

Sec. I	A. EPA hazardous waste code Instruction Page 11 <u>K 0 7 1</u>	B. State hazardous waste code Page 11 <u>K 0 7 1</u>	C. Product or service description Page 11 Chlor-Alkali Production (Mercury Cell Process)	D. Product or service SIC code Page 11 <u>2 8 1 2</u>
E. Waste form code Page 11 <u>N 4 8</u>	F. UOM Page 12 <u>T</u>	G. Density Page 12 <u>1</u> <u>2</u> <input type="checkbox"/> lbs/gal <input checked="" type="checkbox"/> sg	H. Source description: Page 12 Sodium Chloride and Potassium Chloride brine purification muds	I. Source code Page 12 <u>1 0</u>

Sec. II	A. 1988 quantity generated Instruction Page 13 <u>3 6 1 4</u>	B. 1987 quantity generated Page 13 <u>2 2 7 8</u>	C. Production ratio Page 13 <u>0</u> <u>9</u>	D. Toxicity change code Page 15 <u>0</u>
E. Waste minimization: recycling Page 15 Code 1. <u>1</u> 2. <u> </u> Quantity recycled <u>3 0 0</u>		F. Waste minimization: source reduction Page 16 Code 1. <u>1</u> 2. <u>1</u> 3. <u>5</u> Quantity prevented <u>5 0</u>		

Sec. III	A. Narrative description of waste minimization project or activity and results achieved Instruction Page 23 1. Recycle (reuse) brine in lieu of washing by implementing improved operating procedure. 2. Reduced brine muds by improving operation of precoat filters through equipment and procedure modifications.
----------	---

Sec.
IV.

Instructions: Answer questions 1 through 4. Mark ☒ next to the effects produced by the source reduction and/or recycling activity reported on this form in Sections I through III.

1. What effect did this site's source reduction and/or recycling activity have on the **quantity of water effluent** produced by hazardous waste generation processes during 1987?
- ☐ a. Increase in the quantity of water effluent
- ☒ b. Decrease in the quantity of water effluent
- ☐ c. No effect on the quantity of water effluent
- ☐ d. Don't know
2. What effect did this site's source reduction and/or recycling activity have on the **toxicity of water effluent** produced by hazardous waste generation processes during 1987?
- ☐ a. Increase in the concentration of hazardous constituents
- ☐ b. Decrease in the concentration of hazardous constituents
- ☒ c. No effect on the concentration of hazardous constituents
- ☐ d. Don't know
3. What effect did this site's source reduction and/or recycling activity have on the **quantity of air emissions** produced by hazardous waste generation processes during 1987?
- ☐ a. Increase in the quantity of air emissions
- ☐ b. Decrease in the quantity of air emissions
- ☒ c. No effect on the quantity of air emissions
- ☐ d. Don't know
4. What effect did this site's source reduction and/or recycling activity have on the **toxicity of the air emissions** produced by hazardous waste generation processes during 1987?
- ☐ a. Increase in the concentration of hazardous constituents
- ☐ b. Decrease in the concentration of hazardous constituents
- ☒ c. No effect on the concentration of hazardous constituents
- ☐ d. Don't know

Comments:

GROUNDWATER ANNUAL REPORT

Groundwater Monitoring Results:

Attached as Exhibit I are results for calendar year 1987. The February, 1988 retesting results are also included.

Student-t Significant Differences:

*initia - Nov
re-test - Feb*

Upgradient well A-13 indicated a significant difference for parameter, specific conductance, on retesting for the second semi-annual evaluation. This result is considered a false positive since the comparison is between shallow upgradient wells A-6 and A-7 and a deeper well, A-13, in an area with naturally occurring chlorides.

Upgradient well A-7 indicated a significant decrease for parameter, pH, on retesting during first semi-annual evaluation. This is considered a false positive since use of EPA's Average Replicate Method in the September, 1986 T & GD would not indicate a significant decrease. It should also be noted that the pH of impoundment liquids is alkaline.

Student-t calculations are available upon request.

Groundwater Direction and Flowrate:

A plot of elevations readings which indicates groundwater movement maintaining a south-to-north flow direction is shown in Exhibit 2. Wells A-6, A-7, A-13 remain upgradient; wells A-14, A-15, A-16 remain downgradient. Based on elevations, hydraulic conductivity and assumed porosity, groundwater flowrate was approximately 0.4 ft/day.

EXHIBIT I

GROUNDWATER MONITORING RESULTS

DATA MANAGEMENT SUMMARY

OCCIDENTAL CHEMICAL
DELAWARE CITY, DELAWARE

Date Sampled: 5/14/87

Sample Location

Method#	Parameter	A6	A7	A13	A14	A15	A16
-----	-----	---	---	---	---	---	---
ANALYTICAL DATA							
236.2	Arsenic (As)	<5 ug/l	<5 ug/l	<5 ug/l	<5 ug/l	<5 ug/l	<5 ug/l
235.1	Barium (Ba)	0.07	<0.05	<0.05	<0.05	<0.05	0.06
213.1	Cadmium (Cd)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
218.1	Chromium (Cr)	<0.02	<0.02	0.02	<0.02	<0.02	<0.02
225.1	Chloride (Cl)	72	40	800	130	410	520
240.2	Fluoride (F)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
236.1	Iron (Fe)	<0.03	<0.03	<0.03	<0.03	0.03	0.04
239.1	Lead (Pb)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
243.1	Manganese (Mn)	<0.01	0.10	0.04	0.08	0.02	0.08
245.1	Mercury (Hg)	<0.4 ug/l	<0.4 ug/l	<0.4 ug/l	<0.4 ug/l	1.0 ug/l	<0.4 ug/l
353.2	Nitrate (NO3)	3.9	3.7	1.7	4.1	2.4	2.1
420.1	Phenol	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
273.1	Sodium (Na)	50	35	520	100	240	300
375.4	Sulfate (SO4)	40	120	270	120	150	120
415.1	TOC	7.2/7.0/ 7.0/6.7	8.3/8.6/ 8.4/8.4	6.2/6.3/ 6.6/6.5	3.8/3.7/ 3.8/3.8	4.0/3.9/ 4.0/4.0	3.6/3.4/ 3.8/3.5
450.1	TOX (ug/l)	120/120/ 120/120	18/16/15/16	17/32 43/30	19/15/15/18	41/18/44/29	32/34/46/28
900	Gross Alpha	0.0 pci/l	0.6 pci/l	1.1 pci/l	3.6 pci/l	12 pci/l	0.0 pci/l
900	Gross Beta	2.4 pci/l	3.7 pci/l	17 pci/l	6.3 pci/l	12 pci/l	17 pci/l
903.1	Radium-226	0.5 pci/l	0.5 pci/l	0.8 pci/l	0.4 pci/l	2.0 pci/l	1.8 pci/l
904	Radium-228	2.2 pci/l	1.6 pci/l	0.9 pci/l	0.2 pci/l	0.4 pci/l	1.8 pci/l

* All analyses except herbicides and pesticides were performed using Methods for Chemical Analysis of Water and Wastewater, USEPA-600/4-79-020, March, 1979. Herbicides and pesticides were done using Standard Methods, 15th Edition.

All results in ug/l unless otherwise indicated.

DATA MANAGEMENT SUMMARY

OCCIDENTAL CHEMICAL
DELAWARE CITY, DELAWARE

<u>PARAMETER</u>	<u>SAMPLE LOCATION</u>					
	<u>A6</u>	<u>A7</u>	<u>A13</u>	<u>A14</u>	<u>A15</u>	<u>A16</u>
Date sampled	5/14/87	5/14/87	5/14/87	5/14/87	5/14/87	5/14/87
pH	5.2/5.3 5.3/5.3	5.4/5.4 5.4/5.4	5.7/5.8 5.8/5.8	5.3/5.4 5.4/5.4	5.6/5.6 5.6/5.6	5.8/5.9 5.9/6.0
Specific Conductance (umhos/cm)	280/285 280/285	365/355 360/355	2320/2310 2320/2320	475/450 450/445	1150/1100 1200/1200	1500/1450 1450/1500
Coliform (col/100 ml)	16	16	4	<2.2	<1	<1

RESAMPLED SIGNIFICANT DIFFERENCES

Date samples	9/3/87	9/3/87	9/3/87
pH (s.u.)	5.50/5.52 5.54/5.54	5.28/5.30 5.29/5.32	5.56/5.58 5.58/5.57
TOX (ug/l)	11/12 <10/<10		

DATA MANAGEMENT SUMMARY

Report Date: 1/11/88

OCCIDENTAL CHEMICAL
DELAWARE CITY, DELAWARE

Lab Number 59870		Sample Location					
Method#	Parameter	A6	A7	A13	A14	A15	A16
-----	-----	--	--	---	---	---	---
ANALYTICAL DATA							
206.3	Arsenic (As)	<5 ug/l	<5 ug/l	<5 ug/l	<5 ug/l	<5 ug/l	<5 ug/l
208.1	Barium (Ba)	0.10	<0.05	<0.05	0.10	<0.05	<0.05
213.1	Cadmium (Cd)	<0.002	<0.002	<0.002	<0.002	0.002	<0.002
218.1	Chromium (Cr)	0.03	0.07	0.05	<0.02	0.05	0.05
325.1	Chloride (Cl)	100	72	1920	640	310	1520
340.2	Fluoride (F)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
236.1	Iron (Fe)	<0.03	0.25	<0.03	0.03	<0.03	<0.03
239.1	Lead (Pb)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
243.1	Manganese (Mn)	<0.01	0.16	0.05	2.7	0.02	0.02
245.1	Mercury (Hg)	<0.4 ug/l	<0.4 ug/l	<0.4 ug/l	0.6 ug/l	0.9 ug/l	<0.4 ug/l
353.2	Nitrate (NO3)	3.3	3.4	1.8	2.5	2.4	1.8
420.1	Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
270.3	Selenium	<0.2 ug/l	<0.2 ug/l	<0.2 ug/l	<0.2 ug/l	<0.2 ug/l	<0.2 ug/l
272.1	Silver	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
273.1	Sodium (Na)	54	24	340	350	190	680
375.4	Sulfate (SO4)	30	110	280	86	140	240
415.1	TOC	0.79/0.73/ 0.72/0.74	1.6/1.6/ 1.5/1.5	0.76/0.68/ 0.71/0.84	0.89/0.74/ 0.75/0.79	1.7/1.8/ 1.9/1.9	0.79/0.79/ 0.79/0.74
450.1	TOX (ug/l)	31/14/12/15	38/32/25/25	28/24/28/31	29/29/24/31	37/35/18/24	26/25/18/24
900	Gross Alpha	0.0 pci/l	0.0 pci/l	0.0 pci/l	0.0 pci/l	0.0 pci/l	0.0 pci/l
900	Gross Beta	1.2 pci/l	2.1 pci/l	28 pci/l	9.3 pci/l	10 pci/l	1.0 pci/l
903.1	Radium-226	0.8 pci/l	0.3 pci/l	1.4 pci/l	0.7 pci/l	0.1 pci/l	0.6 pci/l
904	Radium-228	2.3 pci/l	2.5 pci/l	3.9 pci/l	9.9 pci/l	1.5 pci/l	5.8 pci/l

DATA MANAGEMENT SUMMARY

page 2

Method#	Parameter	A6	A7	A13	A14	A15	A16
-----	-----	--	--	---	---	---	---
509A	Endrin	<0.05 ug/l	<0.05 ug/l	<0.05 ug/l	<0.05 ug/l	<0.05 ug/l	<0.05 ug/l
509A	Lindane	<0.05 ug/l	<0.05 ug/l	<0.05 ug/l	<0.05 ug/l	<0.05 ug/l	<0.05 ug/l
509A	Methoxychlor	<0.5 ug/l	<0.5 ug/l	<0.5 ug/l	<0.5 ug/l	<0.5 ug/l	<0.5 ug/l
509A	Toxaphene	<0.1 ug/l	<0.1 ug/l	<0.1 ug/l	<0.1 ug/l	<0.1 ug/l	<0.1 ug/l
509B	2,4-D	<2.0 ug/l	<2.0 ug/l	<2.0 ug/l	<2.0 ug/l	<2.0 ug/l	<2.0 ug/l
509B	2,4,5-TP Silvex	<1.0 ug/l	<1.0 ug/l	<1.0 ug/l	<1.0 ug/l	<1.0 ug/l	<1.0 ug/l

* All analyses except herbicides and pesticides were performed using Methods for Chemical Analysis of Water and USEPA-600/4-79-020, March, 1979. Herbicides and pesticides were done using Standard Methods, 15th Edition.

All results in ug/l unless otherwise indicated.

FIELD DATA	A6	A7	A13	A14	A15	A16
Sample Date	11/23/87	11/23/87	11/23/87	11/23/87	11/23/87	11/23/87
Well Elevation (ft)	7.17	7.18	7.14	6.48	6.12	6.04
pH (Std. Units)	5.5/5.5/ 5.5/5.5	5.4/5.4/ 5.4/5.4	5.6/5.6/ 5.6/5.6	5.6/5.6/ 5.6/5.6	5.7/5.7/ 5.7/5.7	5.7/5.7/ 5.7/5.7
Conductivity (uMHOS)	348/350/ 345/350	430/432/ 429/435	4790/4800/ 4750/4790	1700/1750/ 1700/1765	1080/1100/ 1050/1075	3850/3900/ 5875/3900

GROUNDWATER ANALYSIS

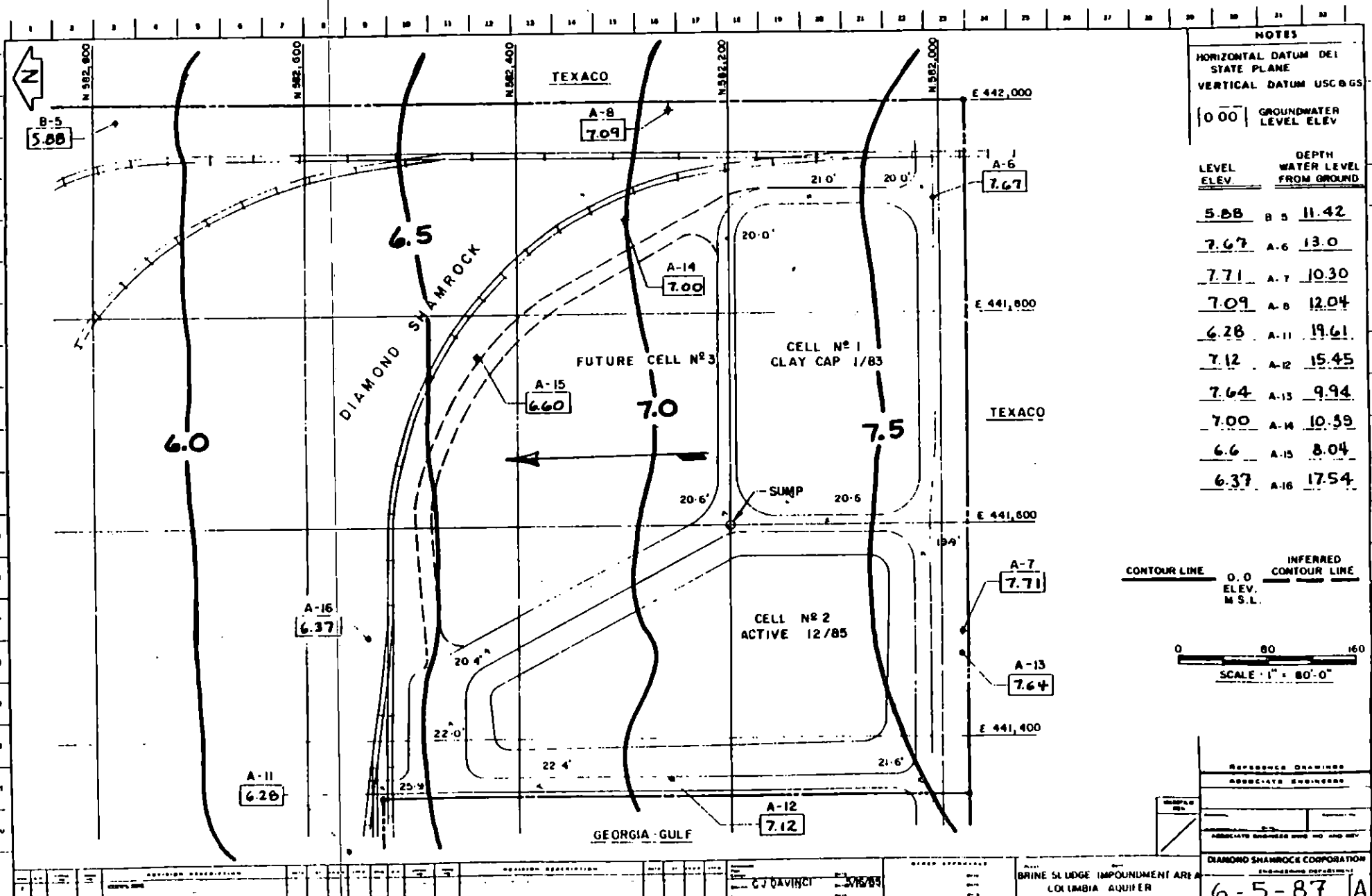
SAMPLE DATE: FEBRUARY 19, 1988

PARAMETER	WELL NO.					
	A-6	A-7	A-13	A-14	A-18	A-16
pH (s.u.)	5.3/5.3	5.4/5.4	6.1/6.1	5.6/5.6	5.9/5.9	5.7/5.7
	5.3/5.3	5.4/5.4	6.1/6.1	5.6/5.6	5.9/5.9	5.7/5.7
Spec. Conduc- tance (umho/cm)	320/318	428/425	3450/3500	475/475	980/1000	1500/1490
	320/320	430/428	3450/3450	478/482	980/1000	1490/1500
Coliform (Col/200mil)	< 2	NS	< 2	< 2	< 2	< 2
Turbidity (NTU's)	18	39	2	14	3	2
Mercury (mg/l)	NS	NS	NS	< 0.001	< 0.001	NS
Elevation (MSL-ft)	7.52	7.51	7.49	6.95	6.60	6.37

NS = Not Sampled

EXHIBIT II

GROUNDWATER ELEVATION PLOTS



NOTES

HORIZONTAL DATUM DEL
STATE PLANE

VERTICAL DATUM USC & GS

0.00 GROUNDWATER
LEVEL ELEV

LEVEL ELEV	DEPTH WATER LEVEL FROM GROUND
5.88	B-5 11.42
7.67	A-6 13.0
7.71	A-7 10.30
7.09	A-8 12.04
6.26	A-11 19.61
7.12	A-12 15.45
7.64	A-13 9.94
7.00	A-14 10.59
6.6	A-15 8.04
6.37	A-16 17.54

CONTOUR LINE 0.0
ELEV.
M.S.L.

**INFERRED
CONTOUR LINE**

0 80 160
SCALE 1" = 80'-0"

REFERENCE DRAWINGS

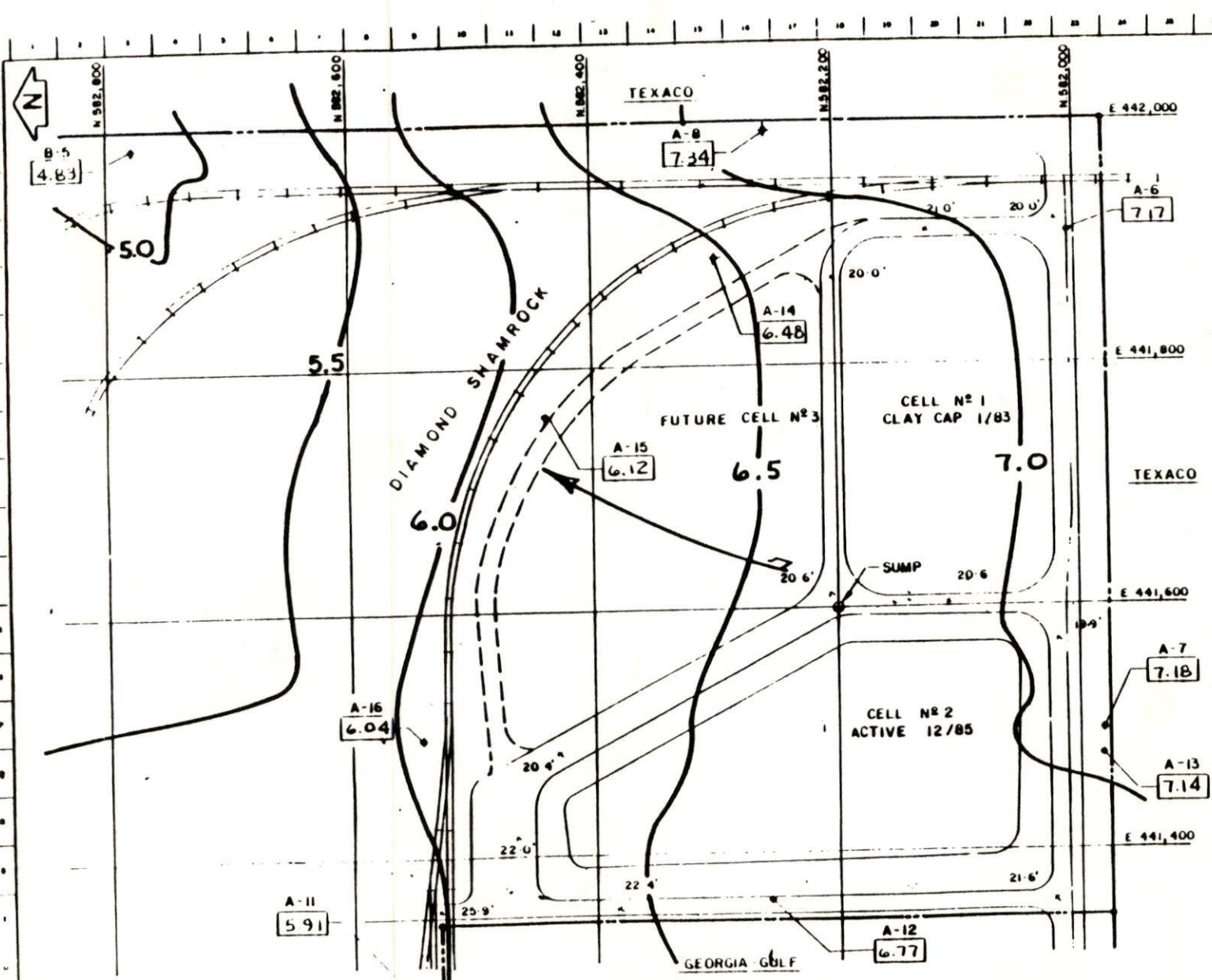
ASSOCIATE ENGINEERS

DIAMOND SHAMROCK CORPORATION

ENGINEERING DEPARTMENT

6-5-87 A

NO.	DESCRIPTION	DATE	BY	CHKD	APP'D
1	DESIGN	12/85	C. J. DAVINCI		
2	CONSTRUCTION				
3	OPERATION				
4	MAINTENANCE				
5	REPAIR				
6	REPLACEMENT				
7	RECONSTRUCTION				
8	DEMOLITION				
9	DISPOSAL				
10	RECYCLING				

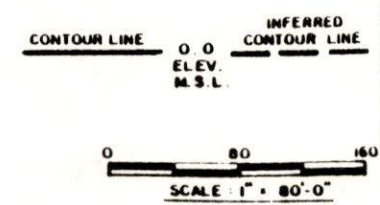


NOTES

HORIZONTAL DATUM DEL STATE PLANE
VERTICAL DATUM USC & GS

0 00 GROUNDWATER LEVEL ELEV

LEVEL ELEV	DEPTH WATER LEVEL FROM GROUND
4.83	B-5 12.47
7.17	A-6 13.50
7.18	A-7 10.83
7.34	A-8 11.79
5.91	A-11 19.96
6.77	A-12 15.80
7.14	A-13 10.44
6.48	A-14 10.91
6.12	A-15 8.52
6.04	A-16 17.87



REFERENCE DRAWINGS

ASSOCIATE ENGINEERS

ASSOCIATE ENGINEER DWS NO. AND REV.

4/7/88

Former Diamond Shamrock, New Castle County

EPA REGION III

GROUND WATER CONTAMINATION INCIDENT REPORT

* SITE NAME: Occidental Chemical Corporation ALIAS: 1) Oxychem
STREET: River Rd. (Electrochemicals Division) 2) Occidental Electrochemical
CITY: Delaware City 3) Diamond Shamrock
STATE: Delaware CONTAMINANT SOURCE: Surface impoundments
ZIP CODE: 19706-0289

USGS QUADRANGLE: _____
LATITUDE _____ LONGITUDE _____
_____/____/____

DATA SOURCE (e.g. DER, WSB) _____

AFFECTED AQUIFER: _____
TYPE WATER SUPPLY AFFECTED (C, NC, P, NONE) _____
AFFECTED PWS# _____

ADDITIONAL INFO AVAILABLE
(e.g. WATSTORE, FRDS) _____

MONITORING FACILITY (YES) _____

If Applicable,
NATIONAL PRIORITIES LIST
(i.e., ANNOUNCED OR FINAL/DATES) _____

CHECK THE CLASSES OF CONTAMINANTS PRESENT

* METALS X
INORGANICS X
ORGANICS X
VOC'S X
OIL/GASOLINE _____
OTHERS (PLEASE LIST) _____

CURRENT STATUS OF ACTIVITIES (if any) currently pursuing storage permit, will need post-closure permit, corrective
action: RFA needed for some units, RFI needed for other units,
COMMENTS: interim corrective measures required
surface water contamination also noted
(Red Lion Creek which flows into Delaware River at
facility)
PLEASE FORWARD TO PATRICIA IRACI (20442) MIKE FREIHEITER

CDM Federal Programs Corporation

13492

September 16, 1987

Hans Waetjen
Project Officer
U.S. Environmental Protection Agency
401 M Street, Room 2834
Washington, D.C. 20460

PROJECT: EPA CONTRACT NO.: 68-01-7331
DOCUMENT NO.: T271-R03-EP-BBKU-1
SUBJECT: Draft Report for Work Assignment 271
Occidental Chemical Corporation, Delaware City Plant
Delaware City, Delaware
F-Solvent Land Disposal Restriction Inspection
Document No.: T271-R03-DR-AZRP-3

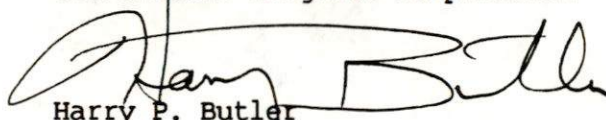
Dear Mr. Waetjen:

Please find enclosed the Draft Report entitled, "Occidental Chemical Corporation, Delaware City Plant, Delaware City, Delaware, F-Solvent Land Disposal Restriction Inspection," as partial fulfillment of the reporting requirements for this work assignment.

If you have any comments regarding this submittal, please contact Eddy S. Lin of PRC Environmental Management, Inc. at (312) 856-8700 by September 29, 1987.

Sincerely,

CDM Federal Programs Corporation


Harry P. Butler
Deputy Program Manager

SMC/sz

Enclosure

cc: Dana J. Barnett, EPA Primary Contact, RCRA Region III
Lorraine Smith, EPA HQ Coordinator, RCRA Region III
Mark diFelicianantonio, CDM Federal Programs Corporation Regional Manager
Bruce Bakaysa (letter only)
Daniel Chow, PRC Environmental Management, Inc. (letter only)

DRAFT REPORT
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY PLANT
DELAWARE CITY, DELAWARE
F-SOLVENT LAND DISPOSAL
RESTRICTION INSPECTION

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, D.C. 20460

Work Assignment No.	:	271
EPA Region	:	III
Facility I.D. No.	:	DED003913266
Contract No.	:	68-01-7331
CDM Federal Programs Corporation Document No.	:	T271-R03-DR-AZRP-3
Prepared By	:	PRC Environmental Management, Inc.
Work Assignment Project Manager	:	Eddy S. Lin
Telephone Number	:	(312) 856-8700
Primary Contact	:	Dana J. Barnett
Telephone Number	:	(215) 597-6688
Date Prepared	:	September 16, 1987

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 SCOPE OF WORK	1
2.0 FACILITY DESCRIPTION	1
2.1 HAZARDOUS WASTE MANAGEMENT	2
2.2 RCRA STATUS	2
3.0 INSPECTION PROCEDURES	3
3.1 PRE-INSPECTION REVIEW	3
3.2 SUMMARY OF INTERVIEWS	3
3.3 FIELD OBSERVATION	4
4.0 COMPLIANCE AND RECOMMENDATIONS	4
4.1 COMPLIANCE ISSUES.	4
4.2 RECOMMENDATIONS	5

1.0 SCOPE OF WORK

CDM Federal Programs Corporation (CDM FPC) received Work Assignment No. 271 from U.S. Environmental Protection Agency (EPA) Region 3 under Contract No. 68-01-7331 (TES III) to conduct F-solvent land disposal restriction inspections at 50 RCRA facilities in EPA Region 3. PRC Environmental Management, Inc., a subcontractor to CDM FPC under TES III, was assigned to conduct 38 of the 50 inspections under this work assignment. The objective of these inspections is to evaluate each facility's compliance with the newly promulgated 40 CFR 268 standards governing treatment, storage, and ultimate disposal of F001 through F005 waste.

This report presents the findings of an inspection conducted by PRC at the Occidental Chemical Corporation (OCC) Delaware City Plant in Delaware City, Delaware.

2.0 FACILITY DESCRIPTION

OCC's Delaware City Plant is located on River Road, over 3 miles north of Delaware City. Its property is bordered to the south by the Texaco Marketing and Refining Company, to the east by the Delaware River, to the north by Red Lion Creek. The plant manufactures basic inorganic chemicals, such as sodium hydroxide, liquid chlorine, and potassium hydroxide. The facility uses a chlor-alkali process which consists of a series of electrolytic cells with a mercury cathode to separate the salt into the desired products.

The mailing address, facility contact, telephone number, and EPA identification number are as follows:

Mailing Address:	Occidental Chemical Corporation Electrochemicals Division River Road Delaware City, Delaware 19706-0289
Facility Contact:	Thomas D. Horvath Environmental Manager
Telephone:	302/834-3831
U.S. EPA ID No.:	DED 003913266

2.1 HAZARDOUS WASTE MANAGEMENT

The hazardous waste generated at the facility are the residues from an NPDES permitted wastewater treatment plant, residue from brine recycling operations, mercury contaminated process waste, spent carbon tetrachloride from the chlorine manufacturing process, and mineral spirits from the cleaning and maintenance operation. Water from the electrolytic process is treated to remove mercury impurities prior to NPDES discharge. The residue generated from the wastewater treatment plant is listed as hazardous for mercury under EPA code K106. The residues from brine recycling and wastewater treatment are placed in a disposal impoundment on-site for dewatering and final disposal.

Carbon tetrachloride (CCl_4) is used to absorb chlorine in the tail gas from the chlorine liquefier. The tail gas contains 40 percent chlorine and 60 percent other gases, such as nitrogen, oxygen, hydrogen, and carbon dioxide. After absorption, the chlorine gas is recovered in a stripper, and carbon tetrachloride is recycled back to the absorber. The other gases are vented to the atmosphere. Once spent, the carbon tetrachloride is stored in a 200-gallon tank, prior to being shipped off-site to Rollins Environmental Services for incineration.

Carbon tetrachloride was also used as a degreaser for vessel cleaning and maintenance. However, the facility is now using mineral spirits for that purpose. Freon is used in the facility for refrigeration.

2.2 RCRA STATUS

OCC operates three RCRA hazardous waste units. They are a container storage area, a storage tank, and a disposal impoundment. The RCRA disposal impoundment consists of three cells: Cell No. 1 was closed prior to 1983, Cell No. 2 is currently active, and Cell No. 3 is proposed for future operation. OCC submitted a revised Part A permit application on July 27, 1983. OCC submitted a Part B permit application addressing all units that are currently under review by DNREC.

3.0 INSPECTION PROCEDURES

This section discusses PRC's inspection procedures.

3.1 PRE-INSPECTION REVIEW

Prior to the inspection, PRC reviewed pertinent documents provided by EPA Region 3. PRC also reviewed documents at the Delaware Department of Natural Resources and Environmental Control (DNREC) office in Dover, Delaware. The following items were reviewed:

- o Part A permit application
- o Comprehensive Ground-Water Monitoring Evaluation
- o Part B permit application (selected sections)
- o 1986 Hazardous Waste Report
- o 1987 manifests

From the manifests, PRC determined that OCC transported a total of 123,830 pounds of waste carbon tetrachloride under waste code U211 to Rollins Environmental Services in Bridgeport, New Jersey, on January 18, 19, 20, and 24, 1987.

3.2 SUMMARY OF INTERVIEWS

The LDR inspection was conducted at the facility on June 4, 1987, according to the EPA Inspection Manual, RCRA Land Disposal Restriction Rule, December 1986. The following people participated in this inspection:

Shin Ahn	PRC
Eddy Lin	PRC
Tom Anderson	DNREC
Jay Brahmhatt	DNREC
Thomas Horvath	OCC
Richard Timmons	OCC

PRC interviewed OCC personnel regarding the waste management procedures for spent carbon tetrachloride. Mr. Thomas Horvath of OCC indicated that since carbon tetrachloride is now used only in the chlorine process and no longer in the degreasing process, it is classified as off-specification commercial products (U211) and, therefore, the F-solvent LDR inspection is not applicable to the facility. However, PRC believes that the carbon tetrachloride should be classified as F002 waste because it reacts as a solvent to absorb the chlorine gas in the tail gas. After some discussion on the classification of spent carbon tetrachloride with OCC personnel, PRC consulted with the EPA Region 3 primary contact, Mr. Dana J. Barnett. As directed by Mr. Barnett, PRC abandoned the inspection without a complete review of facility records.

3.3 FIELD OBSERVATION

As requested by PRC, OCC personnel showed the inspectors the chlorine gas absorber, stripper, and waste carbon tetrachloride storage tank. The aboveground storage tank has a capacity of 200 gallons and is 2.6 feet in diameter and approximately 8 feet long. The storage tank is made of carbon steel and has a pressure rating of 120 pounds per square inch. The tank is kept under vacuum to allow for the recovery of chlorine vapor.

4.0 COMPLIANCE AND RECOMMENDATIONS

The following sections discuss compliance and recommendations for the OCC facility.

4.1 COMPLIANCE ISSUES

Since the inspection was abandoned, PRC did not determine whether the facility was in compliance with 40 CFR 268 regulations.

4.2 RECOMMENDATIONS

Based on the information provided to PRC, the waste carbon tetrachloride generated in OCC's chlorine process should be classified as F002 waste, instead of U211 waste as determined by OCC. However, the final waste classification should be determined by EPA. If the waste carbon tetrachloride generated from the chlorine process is classified as F002 waste solvent, an LDR inspection, including the newly promulgated "California List" wastes, should be conducted at the OCC facility.